PROPOSED RULE MAKING

(RCW 34.05.320)

CR-102 (710/97)

Do **NOT** use for expedited adoption

Agency: **State Building Code Council**

☒ **Original Notice**
☐ **Supplemental Notice to WSR**
☐ **Continuance of WSR**

☒ **Preproposal Statement of Inquiry was filed as WSR 02-15-103; or**
☐ **Expedited Adoption—Proposed Rule Making notice was filed as WSR ; or**
☐ **Proposal is exempt under RCW 34.05.310(4).**

(a) Title of Rule: (Describe Subject) **Amendment of Chapter 51-40 WAC, 1997 Uniform Building Code Sections 403.7, 905.2.1, and 1004.3.4.5.**

Purpose: To adopt provisions in Chapter 51-40 WAC regarding elevator shaft pressurization when used as an alternate to providing elevator lobbies at each floor where an elevator opens into a corridor.

(b) Statutory authority for adoption:
RCW 19.27.031 and RCW 19.27.074

Statute being implemented:
RCW 19.27 and RCW 34.05

(c) Summary: WAC 51-40 allows elevator shaft pressurization as an alternate to providing elevator lobbies at each floor where an elevator opens into a corridor. The proposed rule establishes technical design requirements for the elevator shaft pressurization system and specific criteria for using this alternate method.

Reasons supporting proposal: The proposed rule adds to the state building code specific technical guidance needed for designing an elevator shaft pressurization system which will assure equivalent fire-life safety when compared to constructing a fire-resistive elevator lobby at each floor.

(d) Name of Agency Personnel Responsible for:

		Office Location	Telephone
1. Drafting . . . . . . Al Rhoades	PO Box 48350,	Olympia, WA 98504-8350	(360)725-2970
2. Implementation . . . Al Rhoades	PO Box 48350,	Olympia, WA 98504-8350	(360)725-2970
3. Enforcement . . . . . Local Jurisdictions			

(e) Name of Proponent (person or organization)
Washington State Building Code Council

☐ **Private**
☐ **Public**
☒ **Governmental**

(f) Agency comments or recommendations, if any, as to statutory language, implementation, enforcement, and fiscal matters:
The Council is seeking comments on the amendments proposed in the attached rules.

(g) Is rule necessary because of:

Federal Law?	☐ **Yes**	☒ **No**	If yes, ATTACH COPY OF TEXT
Federal Court Decision?	☐ **Yes**	☒ **No**	Citation:
State Court Decision	☐ **Yes**	☒ **No**	

(h) HEARING LOCATION:
West Coast SeaTac Hotel, Seattle Room
18220 International Blvd. S.
SeaTac, Washington

Date: Nov. 26, 2002 **Time: 10:00 a.m.**

Assistance for persons with disabilities:
Contact Patti Thorn by Nov. 13, 2002

TDD (360) 753-2200 **Or (360) 725-2966**

Submit written comments to: Jim Lewis, Chairman
SBCC, PO Box 48350, Olympia WA 98504-8350

FAX: (360) 586-9383 **Received By (date)** Nov. 24, 2002

DATE OF INTENDED ADOPTION: Nov. 26, 2002

CODE REVISER USE ONLY

NAME (TYPE OR PRINT)
Jim Lewis

SIGNATURE

TITLE	**DATE**
Council Chair	Sept. 13, 2002

(j) Short explanation of rule, its purpose, and anticipated effects:

The proposed rule adds specific technical requirements in Chapter 51-40 WAC for the design of elevator shaft pressurization systems. Currently WAC 51-40 allows elevator shaft pressurization as an alternate to providing elevator lobbies at each floor where an elevator opens into a corridor. The proposed rule provides the design criteria needed to assure that utilizing the elevator shaft pressurization option will provide **equivalent fire-life safety when compared to constructing a fire-resistive elevator lobby at each floor. Use of the pressurized elevator shaft option over the fire-resistive lobby design allows for improved aesthetics and increased rentable floor space in buildings.**

Does proposal change existing rules? ☒ **Yes** ☐ **No** If yes, describe changes:

The proposed rule adds specific criteria and technical design requirements for using the elevator shaft pressurization option in the state building code.

(k) Has a small business economic impact statement been prepared under Chapter 19.85 RCW?

☐ Yes. Attach copy of small business economic impact statement.
A copy of the statement may be obtained by writing to:

Telephoning:
Faxing:

☒ **No**. Explain why no statement was prepared.

Proposed rule does not have an economic impact.

(l) Does RCW 34.05.328 apply to this rule adoption? ☐ **Yes** ☒ **No**

Please explain:

The State Building Code Council is not listed in this section as one of the agencies required to comply with this regulation.

AMENDATORY SECTION

WAC 51-40-403 Section 403—Special provisions for Group B office buildings and Group R, Division 1 occupancies.

403.6.1 General. A central control station room for fire department operations shall be provided. The location, size and arrangement of the central control station shall be approved by the authority having jurisdiction. The central control station room shall be separated from the remainder of the building by not less than a one-hour fire-resistive occupancy separation. It shall contain the following as a minimum:

1. The voice alarm and public address system panels.
2. The fire department communications panel.
3. Fire-detection and alarm systems annunciator panels.
4. Annunciator visually indicating the location of the elevators and whether they are operational.
5. Status indicators and controls for air-handling systems.
6. Controls for unlocking all stairway doors simultaneously.
7. Sprinkler valve and water-flow detector display panels.
8. Emergency and standby power status indicators.
9. A telephone for fire department use with controlled access to the public telephone system.
10. Fire pump status indicators.
11. Schematic building plans indicating the typical floor plan and detailing the building core, means of egress, fire-protection systems, fire fighting equipment and fire department access.
12. Work table.

403.7 Elevators. Elevators and elevator lobbies shall comply with the provisions of Chapter 30 and the following:

NOTE: A bank of elevators is a group of elevators or a single elevator controlled by a common operating system; that is, all those elevators that respond to a single call button constitute a bank of elevators. There is no limit on the number of cars that may be in a bank or group, but there may not be more than four cars within a common hoistway.

1. Elevators on all floors shall open into elevator lobbies that are separated from the remainder of the building, including corridors and other means of egress, by walls extending from the floor to the underside of the fire-resistive floor or roof above. Such walls shall not be of less than one-hour fire-resistive construction. Openings through such walls shall conform to Section 1004.3.4.3.2.

EXCEPTIONS: 1. The main entrance-level elevator lobby in office buildings.

2. Elevator lobbies located within an atrium complying with the provisions of Section 402.

3. In fully sprinklered office buildings, corridors may lead through enclosed elevator lobbies if all areas of the building have access to at least one required means of egress without passing through the elevator lobby.

4. Where elevator shafts are pressurized in accordance with Section 905, elevator lobbies need not be provided.

2. Each elevator lobby shall be provided with approved smoke detector(s) installed in accordance with their listings. When the detector is activated, elevator doors shall not open and all cars serving that lobby are to return to the main floor and be under manual control only. If the main floor detector or a transfer floor detector is activated, all cars serving the main floor or transfer floor shall return to a location approved by the fire department

and building official and be under manual control only. The detector may serve to close the lobby doors, additional doors at the hoistway opening allowed in Section 3007 and smoke dampers serving the lobby.

3. Elevator hoistways shall not be vented through an elevator machine room. Each elevator machine room shall be treated as a separate smoke-control zone.

NEW SECTION

WAC 51-40-905 Section 905—Smoke control.

905.2.1 General. Buildings or portions thereof required by this code to have a smoke-control system shall have such systems designed in accordance with the requirements of this section.

EXCEPTIONS: 1. Smoke and heat venting required by Section 906.

2. Where elevator shaft pressurization is required to comply with Exception 4 of Section 403.7, 1 or Exception 4 of Section 1004.3.4.5, the pressurization system shall comply with the following:

2.1. Elevator shafts shall be pressurized to not less than 0.10 inch of water column relative to atmospheric pressure. Elevator pressurization shall be measured with elevator cars at the designated primary recall level with the doors in the open position. The test shall be conducted at the location of the calculated maximum positive stack effect in the elevator shaft. The measured pressure shall be sufficient to provide 0.10 inch of water column as well as accounting for the stack and wind effect expected on the mean low temperature January day.

2.2. The elevator shaft pressurization shall be activated by a fire alarm system which shall include smoke detectors or other approved detectors located near the elevator shaft on each floor as approved by the building official and the fire chief. If the building has a fire alarm panel, detectors shall be connected to, with power supplied by, the fire alarm panel.

2.3. Elevator shaft pressurization equipment and its ductwork located within the building shall be separated from other portions of the building by construction equal to that required for the elevator shaft.

2.4. Elevator shaft pressurization air intakes shall be located in accordance with Section 905.7.4. Such intakes shall be provided with smoke detectors which upon detection of smoke, shall deactivate the pressurization fan supplied by that air intake.

2.5. The power source for the fire alarm system and the elevator shaft pressurization system shall be in accordance with Section 905.8.

2.6. Hoistway venting required by Section 3004 need not be provided for pressurized elevator shafts.

2.7. Elevator machine rooms required to be pressurized by Section 3005.2 need not be pressurized where separated from the hoistway by shaft construction in accordance with Section 711.

2.8. Special inspection shall be required in accordance with Section 905.15.9 and Section 1701.

AMENDATORY SECTION

WAC 51-04-1004 The exit access.

1004.3.2.3.1 Width. The clear width of aisles shall be based on the number of fixed seats served by the aisle. The required width of aisles serving fixed seats shall not be used for any other purpose.

The clear width of an aisle in inches shall not be less than the occupant load served by the aisle multiplied by 0.3 for aisles with slopes greater than 1 unit vertical to 8

units horizontal (12.5% slope) and not less than 0.2 for aisles with a slope of 1 unit vertical to 8 units horizontal (12.5% slope) or less. In addition, when the rise of steps in aisles exceeds 7 inches (178 mm), the aisle clear width shall be increased by 1¼ inches (32 mm) for each 100 occupants or fraction thereof served for each ¼ inch (6.35 mm) of riser height above 7 inches (178 mm).

EXCEPTION: For buildings with smoke-protected assembly seating and for which an approved life-safety evaluation is conducted, the minimum clear width of aisles and other means of egress may be in accordance with Table 10-D. For Table 10-D, the number of seats specified must be within a single assembly area, and interpolation shall be permitted between the specified values shown. If Table 10-D is used the minimum clear widths shown shall be modified in accordance with the following:

1. Where risers exceed 7 inches (178 mm) in height, multiply the stairway width in the tables by factor *A*, where:

$$A = 1 + \frac{(\text{riser height} - 7.0 \text{ inches})}{5} \quad (4\text{-}1)$$

For **SI:** $A = 1 + \frac{(\text{riser height} - 178 \text{ mm})}{127}$

Where risers do not exceed 7 inches (178 mm) in height, $A = 1$.

2. Stairways not having a handrail within a 30-inch (762 mm) horizontal distance shall be 25 percent wider than otherwise calculated, i.e., multiply by $B = 1.25$. For all other stairs, $B = 1$.

3. Ramps steeper than 1 unit vertical in 10 units horizontal (10% slope) where used in ascent shall have their width increased by 10 percent, i.e., multiply by $C = 1.10$. For ramps not steeper than 1 unit vertical in 10 units horizontal (10% slope), $C = 1$. Where fixed seats are arranged in rows, the clear width of aisles shall not be less than set forth above or less than the following minimum widths:

3.1 Forty-eight inches (1219 mm) for stairways having seating on both sides.

3.2 Thirty-six inches (914 mm) for stairways having seating on one side.

3.3 Twenty-three inches (584 mm) between a stairway handrail and seating where the aisles are subdivided by the handrail.

3.4 Forty-two inches (1067 mm) for level or ramped aisles having seating on both sides.

3.5 Thirty-six inches (914 mm) for level or ramped aisles having seating on one side.

3.6 Twenty-three inches (584 mm) between a stairway handrail and seating where an aisle does not serve more than five rows on one side.

Where exit access is possible in two directions, the width of such aisles shall be uniform throughout their length. Where aisles converge to form a single path of exit travel, the aisle width shall not be less than the combined required width of the converging aisles.

1004.3.2.5.2 Where required. Aisles with a slope steeper than 1 unit vertical in 8 units horizontal (12.5% slope) shall consist of a series of risers and treads extending across the entire width of the aisle, except as provided in Section 1004.3.2.6.

The height of risers shall not be more than 8 inches (203 mm) nor less than 4 inches (102 mm) and the tread run shall not be less than 11 inches (279 mm). The riser height shall be uniform within each flight and the tread run shall be uniform throughout the aisle. Variations in run or height between adjacent treads or risers shall not exceed 3/16 inch (4.8 mm).

EXCEPTION: Where the slope of aisle steps and the adjoining seating area is the same, the riser heights may be increased to a maximum of 9 inches (229 mm) and may be nonuniform, but only to the extent necessitated by changes in the slope of the adjoining seating area to maintain adequate sight lines. Variations may exceed 3/16 inch (4.8 mm) between adjacent risers, provided the exact location of such variations is identified with a marking stripe on each tread at the nosing or leading edge adjacent to the nonuniform riser. The marking stripe shall be distinctively different from the contrasting marking stripe.

A contrasting marking stripe or other approved marking shall be provided on each tread at the nosing or leading edge such that the location of each tread is readily apparent when viewed in descent. Such stripe shall be a minimum of 1 inch (25 mm) wide and a maximum of 2 inches (51 mm) wide.

EXCEPTION: The marking stripe may be omitted where tread surfaces are such that the location of each tread is readily apparent when viewed in descent.

1004.3.2.6 Ramp Slope. The slope of ramped aisles shall not be more than 1 unit vertical in 8 units horizontal (12.5% slope). Ramped aisles shall have a slip-resistant surface.

EXCEPTION: When provided with fixed seating, theaters may have a slope not steeper than 1 unit vertical in 5 units horizontal (20% slope).

1004.3.2.7 Handrails. Handrails shall comply with the height, size, and shape dimensions set forth in Section 1003.3.3.6, and ends shall be returned or shall have rounded terminations or bends. Ramped aisles having a slope steeper than 1 unit vertical in 10 units horizontal (6.7% slope) and aisles stairs (two or more adjacent steps) shall have handrails located either at the side or within the aisle width. Handrails may project into the required aisle width a distance of 3-1/2 inches (89 mm).

EXCEPTIONS: 1. Handrails may be omitted on ramped aisles having a slope not steeper than 1 unit vertical in 5 units horizontal (20% slope) and having fixed seats on both sides of the aisle.

2. Handrails may be omitted where a guardrail is at the side of an aisle that conforms to the size and shape requirements for handrails.

Handrails located within the aisle width shall be discontinuous with gaps or breaks not to exceed five rows. These gaps or breaks shall have a clear width of not less than 22 inches (559 mm) not more than 36 inches (914 mm) measured horizontally.

1004.3.4.5 Elevators. Elevators opening into a corridor shall be provided with an elevator lobby at each floor containing such a corridor. The lobby shall completely separate the elevators from the corridor by construction conforming to Section 1004.3.4.3.1 and all openings into the lobby wall contiguous with the corridor shall be protected as required by Section 1004.3.4.3.2.

EXCEPTIONS: 1. In office buildings, separations need not be provided from a street floor lobby, provided the entire street floor is protected with an automatic sprinkler system.

2. Elevators not required to meet the shaft enclosure requirements of Section 711.

3. When additional doors are provided in accordance with Section 3007.

4. <u>In fully sprinklered buildings,</u> where elevator <u>and stair</u> shafts are pressurized in accordance with Section 905, elevator lobbies need not be provided.

Elevator lobbies shall comply with Section 3002.